STANTON
LATTJC

NAME_____

SEMESTER EXAM (ADVANCED)

1. If the resistance in a series RC circuit is increased, the current through the resistor will:
   a. Be more in phase with the voltage across the resistor
   b. Be more in phase with the applied voltage
   c. Lead the voltage across the capacitor by a greater amount
   d. Be more in phase with the current through the capacitor

2. If the frequency of the voltage applied to a series LR circuit is increased, the voltage drop across the resistor will:
   a. Lead the current through the coil by a greater phase angle
   b. Lag the applied voltage by a greater phase angle
   c. Be more in phase with the applied volatge
   d. Remain the same

3. If a saw-tooth wave is applied to an RC circuit having a short time constant, the voltage across the:
   a. Capacitor will be very nearly equal to the applied voltage
   b. Resistor will be zero
   c. Capacitor will be zero
   d. Resistor will be very nearly equal to the applied voltage

4. If a square wave is applied to an RC network that has a very short time constant, the output across the capacitor will be a:
   a. Square wave
   b. Peaked wave
   c. Saw-tooth wave
   d. Sine wave

5. When a series diode limiter is producing the clipping action, the diode is:
   a. Conducting
   b. Not conducting

6. Oscillations will take place in a Wien-bridge oscillator when the regenerative feedback is:
   a. Less than the degenerative feedback
   b. Equal to or greater than the degenerative feedback
   c. 180° in phase with the degenerative feedback

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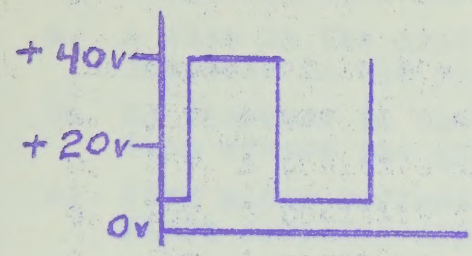
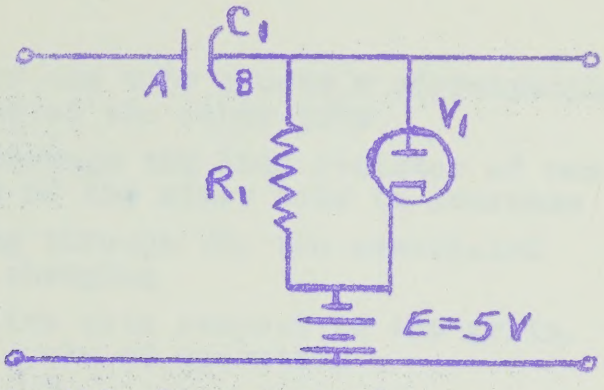
SEMESTER EXAM (cont)

7.





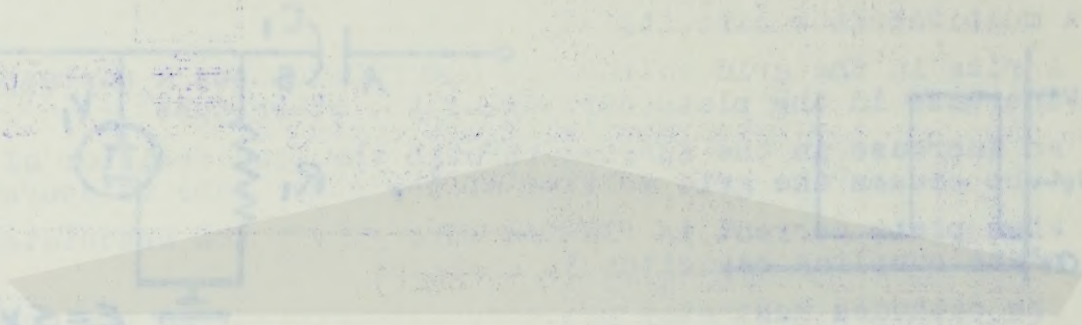
7. In the figure above, the circuit will clamp a wave:
   a. Positive to a negative 5v
   b. Positive to a positive 5v
   c. Negative to a neagtive 5v
   d. Negative to a positive 5v

8. The capacitor in the figure above will maintain a charge of about:
   a. 35v, A positive and B negative
   b. 45v, A positive and B negative
   c. 15v, A positive and B negative
   d. 35v, A negative and B positive

9. The step counter, when used with a blocking oscillator, is a:
   a. Type of square wave generator circuit
   b. Frequency multiplier circuit
   c. Type of time delay circuit
   d. Frequency divider circuit

10. The duration of the R-F pulse in a self-pulsing oscillator is determined primarily by the:
   a. Values of L and C in the tank circuit
   b. RC combination in the grid circuit
   c. Grid capacitor
   d. Value of B+ on the oscillator

11. When synchronizing a single-swing blocking oscillator, it is usually desireable to have the free-running frequency:
   a. Higher than the forced frequency
   b. Lower than the forced frequency
   c. The same as the forced frequency



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SEMESTER EXAM (cont)

12. In a multivibrator circuit:

a. A rise in the grid voltage of one tube causes a corresponding increase in the plate current of the other tube

b. An increase in the current through the load resistor of one tube causes the grid voltage of the other tube to decrease

c. When plate current is flowing through V2, the associated plate coupling capacitor is charging

d. The cathodes must stay positive with respect to the grids, in order to complete a full cycle of operation

13. The linearity of a thyratron saw-tooth generator may be improved by substitution of a pentode for the charging resistor. Linearity is improved because the:

a. Trigger input voltage to the saw-tooth generator allows a more precise control of the charging current than is the case where the thyratron is triggered

b. Plate voltage changes do not result in plate current changes

c. Plate voltage change is exactly 180° out of phase with the grid voltage

d. Plate voltage changes very linearly as the plate current changes

14. Video amplifiers are nesessary in radar circuits, to pass non-sinusoidal waveforms encountered, because:

a. They increase the officiency of the radar receiver

b. The stage gain with this type of amplifier is higher

c. The use of impedance coupling enables us to more easily integrate or differentiate the waveforms

d. They have the flat frequency response necessary to pass the many frequency components in square waves, peaked waves, etc.

15. The vertical deflection sensitivity of a given electrostatic CRT is usually greater than the horizontal deflection sensitivity because:

a. The vertical deflection plates are further from the screen than the horizontal deflection plates

b. The vertical deflection plates are nearer to the screen than the horizontal deflection plates

c. The vertical deflection plates are usually larger in area

d. The horizontal deflection plates are placed closer together than are the vertical deflection plates